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TECHNICAL REPORT NO. LWL-CR-08C72

IDENTIFICATION OF MARIJUANA AND HASHISH SMOKERS

Final Report
Contract No. DAAD05-72-C-0187

COUNTED IN

By
Midwest Research Institute
425 Volker Boulevard
Kansas City, Missouri 64110

November 1972

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PREFACE

This report contains the results of a 7-month program designed to evaluate a rapid presumptive field test for the detection of hashish and hashish smokers. The report covers work conducted over the period 20 March 1972 to 31 October 1972. The project leader was Dr. E. J. Woodhouse, Senior Chemist, who was assisted by Dr. F. I. Metz, Head, Analytical Chemistry Section, and by Mr. G. W. Webb, Research Technician.

Approved for:

MIDWEST RESEARCH INSTITUTE

A E Vandegift
for

H. M. Hubbard, Director
Physical Sciences Division

7 November 1972

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SUMMARY

This report details work conducted on a project designed to evaluate a rapid presumptive field test for detection of hashish and hashish smokers. A kit consisting of lip swabs for smokers and a paper strip test for the hashish was devised and evaluated. Twenty kits, each capable of 20 smoker tests and 20 plant-material tests were assembled and dispatched to the Land Warfare Laboratory. The lip swabs were capable of detecting over 70% of persons smoking a normal amount of marihuana or hashish. The paper strip test is very sensitive and suffers only a few interferences. The paper strips are light-sensitive, however, and should be kept in the dark.

I. INTRODUCTION

This report details the work conducted in a program to evaluate a rapid presumptive field test for detection of hashish and hashish smokers. This report, the final report of a 7-month program details the objectives, accomplishments and results, problems encountered and solutions, conclusions and recommendations.

II. OBJECTIVES

The objectives of this program were to:

1. Determine the feasibility of a simple rapid presumptive field test for hashish smokers and, if feasible,
2. Evaluate a rapid presumptive field test for detection of hashish and hashish smokers.
3. Fabricate 20 kits for testing by the government.

These objectives have been successfully met; the specific accomplishments and results of the research program are given in the next section.

III. ACCOMPLISHMENTS AND RESULTS

The accomplishments and results of this research program are presented in the following order:

- A. Determination of the feasibility of a simple, rapid presumptive field test for hashish smokers.
- B. Evaluation of a rapid presumptive field test for detection of hashish and hashish smokers.
- C. Fabrication of kits.

These are described below:

A. Determination of the Feasibility of a Simple Rapid Presumptive Field Test for Hashish Smokers

It is well known that a color reagent "Fast Blue B" is the most sensitive and specific color reagent for cannabinoids (marihuana or hashish).^{1/} It was therefore decided that a determination of the feasibility of a field test for hashish smokers be based on this color reagent. Described below are the volunteers, materials, test procedures and results of a small feasibility study.

1. Volunteers: Fourteen male volunteers over the age of 21 were invited to participate in a scientifically controlled program designed to accomplish the program objectives.

2. Materials: Hashish for this phase of the program was analyzed by chromatography as having a THC content of 4.5%.

Various pipes, mostly constructed of brass were employed in the investigation. Pipes used were either the straight-through type or of a water filter design.

The chemicals used in the testing procedures consisted of: (a) Fast Blue B solution 0.25% in 0.1 N hydrochloric acid and (b) 0.5 N sodium hydroxide solution.

3. Test procedures: Each of the 14 subjects was tested before smoking. Each subject was then tested again immediately after smoking. A third test was conducted 30 min to 1 hr after the subjects had smoked again. The test procedures were identical in all cases and are as described below.

a. Tooth scrapings: The surface of the teeth and the crevices between the teeth were scraped with a standard dentists tool. The material was transferred from the scraper to a piece of filter paper (approximately 1 in. x 1 in.). The paper was sprayed with Fast Blue B and then dipped in sodium hydroxide. The color was noted.

b. Tooth swipes (swab/wipes): The surface of the front teeth was rubbed hard by one stroke using a strip of filter paper. The filter paper was folded in half and most of the pressure was exerted along the fold which was in contact with the teeth. The paper was then unfolded, sprayed with Fast Blue B and then dipped in sodium hydroxide. The color was noted.

c. Gum swabs: A typical "Q-Tip" swab moistened with ethanol was used to swab the gums especially next to the teeth. The swab was sprayed with Fast Blue B and then dipped in sodium hydroxide. The color was noted.

d. Lip and mouth swabs: A "Q-Tip" moistened with ethanol was used to wipe the upper and lower lips and the mouth around the lips. The swab was sprayed with Fast Blue B and then dipped in sodium hydroxide. The color was noted.

All the test paper and swabs were photographed in color for permanent record. The subjects were identified by color code to preserve anonymity.

4. Results: The results of the color tests are depicted in Tables I through IV, Appendix B. Table I indicates the tooth scrape results; Table II, the tooth swipe results; Table III, the gum swab results; and Table IV, the lip and mouth swab results.

Tooth scrape, tooth swipe and gum swab results were inconclusive in many cases and difficult to judge. The best results were obtained with the lip and mouth swabs. The lip and mouth swabs were also easier to judge than tooth swipes or scrapes.

Examination of the results indicates that lip and mouth swabs are the best test methods investigated. Of the 14 subjects tested, none showed positive on the control run, 10 showed positive on the first smoke and 11 showed positive on the second smoke.

The method could be adapted to field test use--all that is required could be packed into a kit as follows:

- one container of 0.1 N hydrochloric acid
- one vial of solid Fast Blue B
- one container of 0.5 N sodium hydroxide
- one pack of "Q-Tip" swabs
- one vial of alcohol

The Fast Blue B should be mixed with the acid at the start of the day. Swabs dipped in alcohol should then be used to wipe the lips and mouth. The swabs should then be moistened with the Fast Blue B solution and then with the sodium hydroxide. An orange to red color indicates positive. A control may be run using a swab not contacted with the subject being tested. Controls usually remain a faint yellow color.

The conclusion was made that a simple rapid presumptive field test for hashish smokers was feasible and thus the research program proceeded to the next stage--the evaluation.

B. Evaluation of a Rapid Presumptive Field Test for the Detection of Hashish and Hashish Smokers

Based upon the results of the feasibility study, an evaluation of the Fast Blue B test to detect hashish and hashish smokers was conducted. The evaluation was designed to examine the sensitivity and specificity of this test. Described below are the accomplishments and results of the evaluation of the test to detect hashish smokers and the test to detect hashish.

1. Evaluation of the test to detect hashish smokers: This evaluation consisted of the following steps.

- a. Initial investigation of the sensitivity of the test.
- b. Final determination of the sensitivity of the test.
- c. Determination of the specificity of the test.

These steps are described in detail below:

a. Initial investigation of the sensitivity of the test:

(1) Materials: Hashish obtained from the Army was analyzed as being of < 1% THC content. This was the only supply of hashish available for this phase of the program. The material supplied was ground to a fine powder in a mill and divided into dosage units ranging from 2 g to 1/8 g. Marihuana of 1.7% THC content was also readied for use since the hashish was so weak in THC content. A smoking room was readied as was an adjacent laboratory and photographic room.

(2) Volunteer smoking schedules: In cooperation with a local mental health center, we established schedules for volunteers to arrive at the smoking room from 1:00 p.m. to 6:30 p.m. weekdays. All volunteers were male and over 21. No volunteers were allowed to participate more than once a day. A physician was either present or on call during testing.

(3) Testing procedures: Volunteers arriving for tests were requested to read and sign a release form before any tests were conducted. They were then requested to complete a subject data form. After completion of the test, an experimental data form was completed for each volunteer. Sample copies of each of these forms are depicted in Figures 1, 2 and 3 in Appendix A.

The test consisted of a lip swab, both before smoking and after smoking. Color photographs of these swabs were compiled for permanent record. The lip swabs were conducted by initially moistening the swab with ethyl alcohol, rubbing the lips and mouth area with the swab, adding one or two drops of Fast Blue B in acid; and finally, adding one or two drops of sodium hydroxide solution. A positive is indicated by a reddish coloration on the swab.

In order to gain information on the sensitivity of the tests, the following program methodology was followed:

Tests using large amounts of hashish and marihuana (2 g, 1 g, and 1/2 g) followed by testing immediately afterwards.

Tests using fixed amounts of hashish and marihuana followed by testing at given intervals after smoking, e.g., 1 hr and 2 hr.

(4) Results: Subjects smoked from 2 g to 1/16 g of material and tests were conducted up to 2 hr after smoking ceased. The results of the tests are summarized in Tables V and VI (Appendix B). In 82 of the tests, filter pipes were used--the results did not seem to be affected by the use of a water filter. Only two experiments were conducted with 2 g and 1 g of hashish since these quantities caused choking and nausea. In experiments conducted immediately after smoking, 54% showed positives after 1/2 g hashish, 70%, 90% and 0% showed positives after 1/4 g, 1/8 g, and 1/16 g of hashish, respectively. Fifty-five percent, 91%, 30% and 0% showed positives after smoking 1/2 g, 1/4 g, 1/8 g and 1/16 g of marihuana, respectively. After 1 hr 79% showed positives after smoking 1/2 g hashish and 59% showed positive after smoking 1/2 g marihuana. After 2 hr, 68% showed positives after smoking 1/2 g hashish and 60% showed positives after smoking 1/2 g marihuana.

This initial investigation indicated that the majority of smokers could be detected but the results showed trends in the percentages of positive results which were in the reverse of the order expected. An analysis of the results and procedures used to obtain these results indicated that a final determination of the sensitivity of the test should be conducted with the following changes in procedure.

(a) The swabs should be allowed to dry for 5 min before the addition of Fast Blue B.

(b) The swabs should then be allowed to dry for 2 min before the addition of sodium hydroxide.

(c) The color should be noted within 2 seconds after the addition of the sodium hydroxide. Subsequent color changes on the swab should be ignored.

b. Final determination of the sensitivity of the test:

Incorporating experience gained in the aforementioned investigation, this investigation was conducted as follows:

(1) Materials: Same as in initial investigation, divided into dosage units of 0.6, 0.4 and 0.25 g. No photographic facilities were used this time since the swabs were deemed valid in color only for 2 seconds after the test.

(2) Voluneeer smoking schedules: Schedules were established with the same volunteers as in the previous investigation. To facilitate participation, schedules for smoking were set for 6:00, 7:00, 8:00 and 9:00 p.m. each weekday evening. No volunteers were allowed to participate more than once a day. All volunteers were male and over 21. A physician was either present or on call during testing.

(3) Testing procedures: Volunteers were requested to complete the same release forms and subject data forms as in the previous investigation. After completion of the test, an experimental data form was completed for each smoker.

Volunteers were divided into groups of four to six smokers who shared a pipe in a communal smoke. Straight-through pipes were the only type used in this test. Control subjects who smoked no cannabis were also present at each session. Close scrutiny was kept on the cannabis to ensure that it was all used in the smoking experiments it was intended for.

All smokers and control subjects were swabbed both before and after each smoking session. The lip swabs were conducted by moistening a "Q-Tip" swab with two drops only of ethyl alcohol. The lips were swabbed with a rolling motion of the swab. The swab was allowed to dry for 5 min, two drops of Fast Blue B solution added and the swab allowed to dry for 2 min. Finally, two drops of sodium hydroxide were added to the swab and the color change within 2 seconds noted. The appearance of a pink or red color within 2 seconds indicated a positive. Yellow or orange colorations did not indicate a positive. Any colorations after 2 seconds did not indicate a positive.

Three hundred and fifty (350) tests were conducted in groups of 50 as follows and in this order:

0.6 g marihuana (1.7% THC) - 50 tests
0.4 g marihuana (1.7% THC) - 50 tests
0.25 g marihuana (1.7% THC) - 50 tests

0.6 g marihuana (1.7% THC) - 50 tests
0.4 g marihuana (1.7% THC) - 50 tests
0.25 g marihuana (1.7% THC) - 50 tests

0.6 g hashish (< 0.1% THC) - 50 tests

Tests were conducted within 5 min of completion of smoking. Tests were not conducted after prolonged periods of time. If a smoker was found to yield a positive before smoking, an extra volunteer was tested and the original smoker's results were not used in determination of the percentage of positive results after smoking. The results of the smoking tests were recorded along with information on facial features such as beard and moustache growth. These results are presented and discussed below.

(4) Results: A compilation of the significant data in chronological order of acquisition is presented in Table VII (Appendix B). This table details all information pertinent to the test, including date/smoker code number, amount and type of cannabis, facial features, previous record of use of tobacco, cannabis, alcohol and drugs, and results of test before and after smoking. Control subjects are also included in this listing. Volunteer smokers yielding positives before smoking were allowed to continue the experiment, but additional volunteers, yielding negatives before smoking, were incorporated into the test program to complete each sample set for calculation of percentage positives. Eleven smokers yielded positives before smoking, thus, the total number of smokers was actually 361. Forty-four control subjects were tested and are included in the listing in Table VII.

A summary of the results is presented in Table VIII (Appendix B). Percentages are given for positive results in each smoking category. The trends are similar in the two groups of marihuana smoking experiments. The average results are:

78% positives for those smoking 0.6 g marihuana

72% positives for those smoking 0.4 g marihuana

61% positives for those smoking 0.25 g marihuana

The one group of hashish smokers yielded 82% positives. Out of the 11 volunteers who indicated positives before smoking, nine admitted taking some form of cannabis prior to the experiment.

The negative results obtained after smoking may be due to many factors including the methods of inserting the pipe into the mouth, the amount inhaled and the texture of the lips. There appears to be no significant correlation between facial features, such as beards and moustaches, and positive or negative results.

The results of the hashish experiment may seem surprising at first considering the low percentage of THC in the hashish. However, cannabis of any form contains three major cannabinoids:

Δ 9-Tetrahydrocannabinol (THC),

Cannabinol, and

Cannabidiol.

Δ 9-THC, the level of which determines the potency of the cannabis, yields a red coloration on the swab. Cannabinol yields a blue/purple coloration and cannabidiol yields an orange coloration on the swab. Low potency cannabis, such as the hashish used in this program usually has moderate levels of both cannabinol and cannabidiol, the mixture of which yields a reddish coloration similar to that produced by THC alone. The hashish used in this program had levels of cannabinol, 0.5%, and cannabidiol, 0.5%.

It should be noted that it was with great reluctance that volunteers agreed to smoke the above mentioned hashish. There seemed to be general agreement that 0.6 g of the marihuana used (1.7% THC) would constitute a "normal" dose in that smokers were able to "get off" on this amount.

c. Determination of the specificity of the test: In order to evaluate the smoker's test for possible interferences, a selection of 53 drugs and 29 herb and spice extracts were examined. One drop of drug (1 mg/ml in methanol) or one drop of herb/spice extract (50 mg/ml in methanol) was placed on a "Q-Tip." This was followed by two drops of Fast Blue B solution and two drops of sodium hydroxide as in the regular smoker's test. The color of the swab was then noted. Controls were run with each test.

Table IX (Appendix B) summarizes the results of these tests which indicate that only Areca, Catechu, Mormon Tea, Mace, and Yohimbe could possibly cause any false positive results. Tofranil and Dilaudid yield pinkish brown colors which are distinguishable from the bright red observed when cannabis is present.

2. Evaluation of test to detect hashish: This evaluation consisted of a simple experiment to determine the sensitivity and specificity of a paper strip impregnated with Fast Blue B as a means of detecting hashish (or marihuana).

a. Determining the sensitivity of the test: The plant material test consists of placing a minute amount of the plant on a specially prepared paper. This paper has been soaked in a saturated methanolic solution of Fast Blue B, dried, and stored in a closed vessel. A drop of ben-

zene is added to the material on the paper, allowed to dry, and the plant material blown off the paper. A drop of 0.2 N sodium hydroxide solution is then added to the paper and the color noted. A positive is indicated by a red color. The test is able to detect less than 100 ng of THC as determined by spotting standard THC solutions onto the paper, followed by sodium hydroxide. This is equivalent to 10 µg of plant material containing 1% THC. Usually the smallest fragment one can handle and see in marihuana or hashish weighs between 100 and 1,000 µg. Thus, the test is amply sensitive.

b. Determination of the specificity of the test: The evaluation of possible interfering substances was conducted by placing a small amount (100 to 1,000 µg) of herb or spice on the paper and conducting the test as described above. Table X (Appendix B) lists the observations for 29 herbs and spices. Possible interferences may be Areca and Catechu, Mormon Tea, Yohimbe, Nutmeg, Cinnamon, Cloves, Ginger and Mace. Careful observation of the color compared to that produced by cannabis, however, will rule out all interferences except Areca, Catechu, Mormon Tea, and Yohimbe.

C. Fabrication of Kits

Twenty kits, each capable of 20 smoker tests and 20 plant material tests have been assembled and dispatched to the Land Warfare Laboratory. Each kit contains:

1 tube of lip swabs	1 dropping vial of base
1 box of test papers	1 dropping vial of benzene
1 vial of Fast Blue B powder	1 dropping vial of alcohol
1 dropping vial of acid	1 instruction card

IV. PROBLEMS ENCOUNTERED AND SOLUTIONS

A potential problem we encountered is that the test papers for the hashish test are light sensitive to some extent. After 1 month under the laboratory fluorescent lights, the sensitivity of the papers is markedly decreased. In the dark (as in a kit) the papers have an undetermined, but longer life. After 1 month in the dark, the sensitivity seems unaffected. Solutions to this problem, if it is a problem, are detailed in the Recommendation in Section VI.

V. CONCLUSIONS

The conclusions drawn from the work conducted in this project are:

1. The swabbing technique on the lips of marihuana smokers as described is capable of detecting approximately 80% of hashish (or marihuana) smokers immediately after smoking a normal amount of cannabis (0.6 g).
2. The paper test for hashish (or marihuana) plant material is capable of detecting a fragment of plant material weighing less than 1 mg.
3. Interferences are restricted to Areca, Catechu, Mormon Tea, and Yohimbe, in the case of either the lip swab or paper test.

VI. RECOMMENDATIONS

In view of the accomplishments and results of this program, the following recommendation is offered:

That a study be conducted on the lifetime of the hashish test papers taking into account such factor as air, light, humidity, and chemical stabilization.

VII. REFERENCE

1. "A Simple and Specific Test for Cannabis," M. J. de Faubert Maunder, J. Assoc. Publ. Anal., 7(1), 24-30 (1969).

CONSENT OF PARTICIPATION
IN
RESEARCH PROGRAM

For valuable consideration, I consent and agree to participate in a series of research experiments which are to be conducted by Midwest Research Institute, a nonprofit Missouri corporation, for the purpose of obtaining data on human response to smoking marihuana. The particular experiments in which I consent and agree to participate will consist of smoking marihuana and/or hashish of customary strength (predetermined by MRI and not higher than 5% THC) under controlled laboratory conditions and under the surveillance of a duly licensed physician. It is expected that the experiment may produce residual marihuana components or their metabolites in my system and I agree to submit to one or more of the following tests for their detection:

- a. Urinalysis
- b. Finger swab
- c. Finger dip
- d. Mouth swab
- e. Mouth wash

As a representation material to this agreement, and as a warranty, I state that I am over the age of twenty-one (21) and that I have no physical, mental, or legal disability. I fully understand that by giving this consent, I waive any and all claims which may or can arise out of these experiments.

I further agree that any information obtained from me, by Midwest Research Institute, or its authorized representatives, in connection with these experiments may be utilized by Midwest Research Institute in whatever manner it sees fit, provided only that I am not identified with such use.

Dated at Kansas City, Missouri, this _____ day of _____,
1972.

Signature

Witness

Figure 1 - Consent of Participation Form

SUBJECT DATA SHEET

Subject Code

Age

Sex

Physical Condition (please note any chronic ailments, e.g., diabetes, etc.):

Drugs, unusual foods, alcoholic beverages and tobacco etc. consumed during and 24 hours prior to this experiment. Please note dates and approximate times:

Thankyou.

Figure 2 - Subject Data Form

EXPERIMENTAL DATA FORM

SUBJECT CODE _____

TYPE OF PIPE

straight

☐

water filter

☐

other

☐

CONTROL TEST

positive

☐

negative

☐

AMOUNT OF HASHISH

_____ g.

TYPE OF HASHISH

INTERVAL BETWEEN
SMOKING & TESTING

_____ min.

SMOKING TEST

positive

☐

negative

☐

DATE _____

Figure 3 - Experimental Data Form

TABLE I

COLOR TEST RESULTS FOR TOOTH SCRAPES

<u>Subject Code</u>	<u>Control</u>	<u>First Smoke</u>	<u>Second Smoke</u>
Pink	-	-	+
Purple	-	+	+
Gray*	-	-	+
Brown*	-	-	-
Orange*	-	-	-
Blue*	-	-	-
Red**	-	+	+
Yellow**	-	-	-
Green	-	-	-
Aqua	+	+	-
Brown/aqua*	-	-	-
Orange/blue	-	-	+
Green/red	+	-	-
Purple/yellow*	-	-	+
Positives	2/14	3/14	6/14

* Filter on first smoke

** Filter on first and second smoke

- Indicates negative

+ Indicates positive

TABLE II

COLOR TEST RESULTS FOR TOOTH SWIPES

<u>Subject Code</u>	<u>Control</u>	<u>First Smoke</u>	<u>Second Smoke</u>
Pink	-	+	+
Purple	-	+	-
Gray*	-	+	+
Brown*	-	+	-
Orange*	-	+	-
Blue*	-	+	-
Red**	-	+	-
Yellow**	-	+	+
Green	+	+	+
Aqua	+	+	+
Brown/aqua*	+	+	+
Orange/blue	-	+	+
Green/red	-	+	+
Purple/yellow*	+	+	+
Positives	4/14	14/14	9/14

* Filter on first smoke

** Filter on first and second smoke

- Indicates negative

+ Indicates positive

TABLE III

COLOR TEST RESULTS FOR GUM SWABS

<u>Subject Code</u>	<u>Control</u>	<u>First Smoke</u>	<u>Second Smoke</u>
Pink	-	-	+
Purple	-	+	+
Gray*	-	++	-
Brown*	-	-	-
Orange*	-	+	+
Blue*	-	+	+
Red**	-	++	+
Yellow**	-	+	+
Green	-	-	-
Aqua	-	+	-
Brown/aqua*	-	+	-
Orange/blue	-	-	-
Green/red	-	+	-
Purple/yellow*	-	-	-
Positives	0/14	9/14	6/14

* Filter on first smoke

** Filter on first and second smoke

- Indicates negative

+

++ Indicates very positive

TABLE IV

COLOR TEST RESULTS FOR LIP AND MOUTH SWABS

<u>Subject Code</u>	<u>Control</u>	<u>First Smoke</u>	<u>Second Smoke</u>
Pink	-	+	+
Purple	-	++	+
Gray*	-	++	-
Brown*	-	-	+
Orange*	-	++	++
Blue*	-	++	++
Red**	-	++	++
Yellow**	-	++	++
Green	-	-	+
Aqua	-	+	+
Brown/aqua*	-	+	-
Orange/blue	-	-	-
Green/red	-	+	+
Purple/yellow*	-	-	+
Positives	0/14	10/14	11/14

* Filter on first smoke

** Filter on first and second smoke

- Indicates negative

+

Indicates positive

++ Indicates very positive

TABLE V

SUMMARY OF TEST RESULTS
FOR HASHISH SMOKER'S TEST
CONDUCTED IMMEDIATELY AFTER SMOKING

<u>Type of Material</u>	<u>Amount (g)</u>	<u>Number of Experiments</u>	<u>Results</u>					
			<u>Control</u>			<u>Test</u>		
			<u>+</u>	<u>-</u>	<u>?</u>	<u>+</u>	<u>-</u>	<u>?</u>
Hashish	2	2	2	-	-	2	-	-
	1	2	-	-	2	2	-	-
	1/2	79	1	69	9	43	7	29
	1/4	20	1	19	-	14	6	-
	1/8	20	2	18	-	18	2	-
	1/16	20	-	20	-	-	20	-
Marihuana	1/2	22	-	18	4	12	1	9
	1/4	46	8	35	3	42	-	4
	1/8	23	3	18	2	7	6	10
	1/16	21	-	21	-	-	19	2
								-

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TABLE VI

SUMMARY OF TEST RESULTS
FOR HASHISH SMOKER'S TEST
CONDUCTED AFTER AN ELAPSED TIME

Elapsed Time (hr)	Type of Material	Amount (g)	Number of Experiments	Results					
				Control			Test		
				+	-	?	+	-	% +
1	Hashish	1/2	14	1	13	-	11	3	79
2	Hashish	1/2	19	1	18	-	13	6	68
1	Marihuana	1/2	51	7	43	1	30	11	59
2	Marihuana	1/2	20	2	18	-	12	8	60

TABLE VII

DETAILED COMPILATION OF DATA ON THE FINAL SMOKING TESTS

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other				Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/17	C-1	6:15 Control	x		x		x		x		x		x		x		x	
10/17	1	0.6 g/1.7%	x		x		x		x		x		x		x		x	
10/17	2	0.6 g/1.7%	x		x										x		x	
10/17	3	0.6 g/1.7%	x		x								x		x		x	
10/17	C-2	6:15 Control	x								x		x		x		x	
10/17	4	0.6 g/1.7%	x												x		x	
10/17	5	0.6 g/1.7%	x				x						x		x			
10/17	6	0.6 g/1.7%	x						Darvon				x		x		x	
									Tofranil				x					
10/17	7	0.6 g/1.7%	x				x						x		x		x	
10/17	8	0.6 g/1.7%	x		x								x		x		x	
10/17	9	0.6 g/1.7%		x	x		x						x		x		x	
10/17	10	0.6 g/1.7%		x	x		x						x		x		x	
10/17	C-1	7:45 Control	x										x		x		x	
10/17	C-2	7:45 Control	x										x		x		x	
10/17	11	0.6 g/1.7%	x												x		x	
10/17	12	0.6 g/1.7%	x						x						x		x	
10/17	13	0.6 g/1.7%	x		x				x						x		x	
10/17	14	0.6 g/1.7%		x	x								x		x		x	
10/17	15	0.6 g/1.7%		x									x		x		x	
10/17	16	0.6 g/1.7%		x											x		x	
10/17	17	0.6 g/1.7%		x											x		x	
10/17	18	0.6 g/1.7%	x		x										x		x	
10/17	19	0.6 g/1.7%	x		x		x		Penicillin						x		x	
10/17	20	0.6 g/1.7%	x		x				Penicillin						x		x	
10/17	21	0.6 g/1.7%		x	x										x		x	
10/17	22	0.6 g/1.7%		x	x				Valium				x		x		x	
10/17	23	0.6 g/1.7%		x	x				Coricidin						x		x	
10/17	24	0.6 g/1.7%		x	x				Penicillin				x		x		x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol				Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/17	C-3	9:30 Control		x		x		x				x		x		x	x	
10/17	25	0.6 g/1.7%		x		x			Aspirin							x	x	
10/17	26	0.6 g/1.7%		x														
10/17	27	0.6 g/1.7%	x														x	
10/17	C-1	9:35 Control		x		x		x				x				x	x	
10/17	C-2	9:35 Control		x		x		x				x				x	x	
10/18	28	0.6 g/1.7%	x					x		x						x		
10/18	29	0.6 g/1.7%		x				x									x	
10/18	30	0.6 g/1.7%	x					x									x	
10/18	31	0.6 g/1.7%		x						x								x
10/18	32	0.6 g/1.7%		x										x			x	
10/18	33	0.6 g/1.7%		x						x							x	
10/18	34	0.6 g/1.7%		x				x									x	
10/18	35	0.6 g/1.7%		x						x							x	
10/18	36	0.6 g/1.7%		x													x	
10/18	37	0.6 g/1.7%		x													x	
10/18	38	0.6 g/1.7%						x-hash									x	
10/18	39	0.6 g/1.7%	x					x-hash						x			x	
10/18	40	0.6 g/1.7%	x					x									x	
10/18	C-1	Control		x		x												
10/18	41	0.6 g/1.7%		x		x				x				x			x	
10/18	42	0.6 g/1.7%		x														
10/18	43	0.6 g/1.7%	x					x-hash						x			x	
10/18	44	0.6 g/1.7%		x				x-hash						x				
10/18	45	0.6 g/1.7%		x				x-hash									x	
10/18	46	0.6 g/1.7%		x										x			x	
10/18	47	0.6 g/1.7%		x				x						x			x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol			Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	Yes	No	(+)	(-)	(+)	(-)
10/18	48	0.6 g/1.7%	x		x				x					x		x	
10/18	49	0.6 g/1.7%		x	x		x			Darvon		x		x		x	
10/18	50	0.6 g/1.7%		x		x						x		x		x	
10/18	C-1	7:45 Control		x		x		x			x	x		x		x	
10/18	51	0.4 g/1.7%	x		x									x		x	
10/18	52	0.4 g/1.7%		x		x					x			x		x	
10/18	53	0.4 g/1.7%		x		x								x		x	
10/18	54	0.4 g/1.7%		x		x								x		x	
10/18	55	0.4 g/1.7%		x		x								x		x	
10/18	56	0.4 g/1.7%		x		x				x				x		x	
10/18	57	0.4 g/1.7%		x		x								x		x	
10/18	58	0.4 g/1.7%		x		x				x				x		x	
10/18	59	0.4 g/1.7%		x		x				x				x		x	
10/18	60	0.4 g/1.7%	x		x		x			x	Chlor-			x		x	
10/18	61	0.4 g/1.7%		x		x					Trimeton						
10/18	62	0.4 g/1.7%		x		x		x						x		x	
10/18	63	0.4 g/1.7%	x					x-hash						x		x	
10/18	64	0.4 g/1.7%		x		x					Penicillin			x		x	
10/18	65	0.4 g/1.7%		x		x								x		x	
10/18	C-1	9:30 Control		x		x		x				x		x		x	
10/18	C-2	9:30 Control		x		x						x		x		x	
10/19	C-1	6:15 Control		x		x		x		x		x		x		x	
10/19	66	0.4 g/1.7%		x		x		x-hash						x		x	
10/19	67	0.4 g/1.7%		x		x						x		x		x	
10/19	68	0.4 g/1.7%		x		x								x		x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other			Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y N	Yes	No	(+)	(-)	(+)	(-)
10/19	69	0.4 g/1.7%	x		x									x		x	
10/19	70	0.4 g/1.7%	x		x							x		x		x	
10/19	71-A	0.4 g/1.7%	x		x					x		x		x		x	
10/19	71-B	0.4 g/1.7%	x								x-codeine -tetracycline						x
10/19	72	0.4 g/1.7%	x		x									x		x	
10/19	73	0.4 g/1.7%	x		x							x		x		x	
10/19	74	0.4 g/1.7%	x		x						aspirin x			x		x	
10/19	75	0.4 g/1.7%	x		x						x (last night/ today)			x		x	
10/19	76	0.4 g/1.7%	x		x									x		x	
10/19	77	0.4 g/1.7%	x								x aspirin Contac			x		x	
10/19	78-A	0.4 g/1.7%	x		x						x (with-x in hour)	x				x	
10/19	78-B	0.4 g/1.7%									chlor-Tri- meton			x			x
10/19	79	0.4 g/1.7%	x											x		x	
10/19	80	0.4 g/1.7%	x		x						x (2hr) Mexican food			x		x	
10/19	81	0.4 g/1.7%	x		x									x		x	
10/19	82	0.4 g/1.7%	x		x									x		x	
10/19	83	0.4 g/1.7%	x		x									x		x	
10/19	84	0.4 g/1.7%	x		x									x		x	
10/19	85	0.4 g/1.7%	x		x									x		x	
10/19	86	0.4 g/1.7%	x		x									x		x	
10/19	87	0.4 g/1.7%	x		x									x		x	
10/19	88	0.4 g/1.7%	x		x									x		x	
10/19	89	0.4 g/1.7%	x		x									x		x	
10/19	C-1	8:15 Control															

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol				Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/19	90	0.4 g/1.7%	x		x				x				x		x		x	
10/19	91	0.4 g/1.7%	x		x				x				x		x			x
10/19	92	0.4 g/1.7%	x		x			x							x		x	
10/19	93	0.4 g/1.7%	x		x				Penicillin						x		x	
10/19	94	0.4 g/1.7%		x		x			x						x		x	
10/19	95	0.4 g/1.7%		x					x						x		x	
10/19	96	0.4 g/1.7%		x		x									x			x
10/19	97	0.4 g/1.7%		x	x			x							x		x	
10/19	98	0.4 g/1.7%		x	x				Penicillin						x		x	
10/19	99	0.4 g/1.7%		x	x				x				x		x		x	
10/19	C-1	9:45 Control		x		x							x		x			x
10/19	100	0.4 g/1.7%		x	x								x		x		x	
10/20	C-1	6:15 Control		x		x												
10/20	101	0.25 g/1.7%		x		x							x		x		x	
10/20	102	0.25 g/1.7%		x									x		x			x
10/20	103	0.25 g/1.7%		x		x							x		x		x	
10/20	104	0.25 g/1.7%		x									x		x		x	
10/20	105	0.25 g/1.7%		x		x			x-hash 4:30pm				x		x		x	
10/20	106	0.25 g/1.7%		x	x				x-hash x cocaine				x					x
10/20	107-A	0.25 g/1.7%		x	x										x		x	
10/20	107-B	0.25 g/1.7%		x	x				x quaalude				x		x		x	
10/20	108	0.25 g/1.7%		x	x										x		x	
10/20	109	0.25 g/1.7%		x	x				x darvon						x		x	
10/20	110	0.25 g/1.7%		x	x				1 joint						x		x	
10/20	111	0.25 g/1.7%		x	x				2 joints						x		x	
10/20	112-A	0.25 g/1.7%		x	x				hash oil								x	
10/20	112-B	0.25 g/1.7%		x		x			Mexican food				x		x			x
10/20	113-A	0.25 g/1.7%		x		x			hash oil 5pm						x		x	
10/20	113-B	0.25 g/1.7%		x	x												x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol Soft Drink/ Other		Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/20	C-2	6:15/6:30 Control		x		x							x		x	
10/20	C-3	6:15/6:30 Control		x		x							x		x	
10/20	C-4	6:30/6:45 Control		x		x					x		x		x	
10/20	114	0.25 g/1.7%		x		x							x		x	
10/20	115	0.25 g/1.7%		x		x			x		x		x		x	
10/20	116	0.25 g/1.7%	x		x			x-hash			x		x		x	
10/20	117	0.25 g/1.7%	x		x			x		Mexican food	x		x		x	
10/20	118	0.25 g/1.7%		x		x				Speed						
10/20	119	0.25 g/1.7%		x		x		x		Codeine	x		x		x	
10/20	120	0.25 g/1.7%	x		x			x3:30pm Contac		Tetracycline	x		x		x	
10/20	121	0.25 g/1.7%		x	x				x		x		x		x	
10/20	122	0.25 g/1.7%		x	x			x 2 J's x			x		x		x	
10/20	123	0.25 g/1.7%		x		x							x		x	
10/20	124	0.25 g/1.7%		x		x							x		x	
10/20	125	0.25 g/1.7%	x		x			x-10am					x		x	
10/20	C-1	8:05 Control		x		x		-2pm								
10/20	126	0.25 g/1.7%		x		x		-6pm			x		x		x	
10/20	127	0.25 g/1.7%	x		x			x-5pm								
10/20	128	0.25 g/1.7%	x		x			-7pm								
10/20	129	0.25 g/1.7%	x		x				x							
10/20	130	0.25 g/1.7%		x	x				x							
10/20	131	0.25 g/1.7%		x		x										
10/20	132	0.25 g/1.7%		x		x										
10/20	133	0.25 g/1.7%		x		x										
10/20	134	0.25 g/1.7%		x		x										
10/20	135	0.25 g/1.7%	x		x			x-hash								
10/20	C-5	8:05/8:25 Control		x		x										
10/20	136	0.25 g/1.7%		x	x			x		Empirin	x					

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other		Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/20	137	0.25 g/1.7%	x		x		x		x		x		x		x	
10/20	138-A	0.25 g/1.7%	x		x		x		x			x			x	
10/23	138-B	0.25 g/1.7%	x		x		x		x				x		x	
10/20	139	0.25 g/1.7%	x		x		x						x		x	
10/20	140	0.25 g/1.7%			x		x				x		x			x
10/20	141	0.25 g/1.7%	x		x		x				x		x		x	
10/20	142	0.25 g/1.7%	x		x		x						x			x
10/20	143	0.25 g/1.7%	x			x			x				x		x	
10/20	144	0.25 g/1.7%	x			x			x		x		x		x	
10/20	145	0.25 g/1.7%	x		x		x		x				x		x	
10/20	146	0.25 g/1.7%	x		x		x		x				x		x	
10/20	147	0.25 g/1.7%	x		x		x		x		x		x		x	
10/20	148	0.25 g/1.7%	x		x		x		x				x		x	
10/20	C-1	9:30 Control	x			x					x		x		x	
10/23	149	0.25 g/1.7%	x		x				C.S.		x		x		x	
10/23	150	0.25 g/1.7%	x		x				x				x		x	
10/23	151	0.6 g/1.7%	x		x		x 4:30						x		x	
10/23	152	0.6 g/1.7%	x		x						x		x		x	
10/23	153	0.6 g/1.7%	x		x		x						x		x	
10/23	154	0.6 g/1.7%	x		x		x 4:30		Dexedrine (10/22)				x		x	
10/23	155	0.6 g/1.7%	x		x								x		x	
10/23	156	0.6 g/1.7%	x			x	x-hash		x		x		x		x	
10/23	157	0.6 g/1.7%			x		x-THC						x		x	
10/23	158-A	0.6 g/1.7%	x		x		x-hash				x				x	
10/23	158-B	0.6 g/1.7%	x		x		x				x		x		x	
10/23	159	0.6 g/1.7%	x			x							x		x	
10/23	160	0.6 g/1.7%	x		x								x		x	
10/23	161	0.6 g/1.7%	x		x		x						x		x	
10/23	162	0.6 g/1.7%	x		x		x-hash				x		x		x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other		Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/23	163	0.6 g/1.7%	x		x				x				x		x	
10/23	164	0.6 g/1.7%		x		x							x		x	
10/23	165	0.6 g/1.7%		x		x							x			
10/23	C-1	6:05 Control		x		x					x		x		x	
10/23	C-2	6:05/6:35 Control		x		x							x		x	
10/23	C-3	6:05/6:40 Control		x		x		x					x		x	
10/23	166	0.6 g/1.7%		x		x					x		x			
10/23	167	0.6 g/1.7%	x		x						x		x		x	
10/23	168	0.6 g/1.7%	x		x						x		x			
10/23	169	0.6 g/1.7%		x		x			x		x		x		x	
10/23	170	0.6 g/1.7%		x		x							x		x	
10/23	171	0.6 g/1.7%		x		x		x					x		x	
10/23	172	0.6 g/1.7%		x		x		2pm	x	chili			x		x	
10/23	173	0.6 g/1.7%	x					2pm	x				x		x	
10/23	174	0.6 g/1.7%		x		x							x		x	
10/23	175	0.6 g/1.7%		x		x			x	Darvon	x		x		x	
10/23	C-4	7:20/7:45 Control		x		x							x			
10/23	176	0.6 g/1.7%		x		x							x		x	
10/23	177	0.6 g/1.7%		x		x							x		x	
10/23	178	0.6 g/1.7%		x		x							x		x	
10/23	179	0.6 g/1.7%		x		x							x		x	
10/23	180	0.6 g/1.7%		x		x							x		x	
10/23	181	0.6 g/1.7%		x		x							x		x	
10/23	182	0.6 g/1.7%		x		x							x		x	
10/23	183	0.6 g/1.7%		x		x							x		x	
10/23	184	0.6 g/1.7%		x		x							x		x	
10/23	185	0.6 g/1.7%		x		x							x		x	
10/23	186	0.6 g/1.7%		x		x							x		x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other				Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/23	187	0.6 g/1.7%	x			x							x		x		x	
10/23	188-A	0.6 g/1.7%	x			x									x		x	
10/23	189	0.6 g/1.7%	x		x										x		x	
10/23	190-A	0.6 g/1.7%	x		x										x		Missed	
10/23	191	0.6 g/1.7%	x			x									x		x	
10/23	192	0.6 g/1.7%	x		x										x		x	
10/23	193	0.6 g/1.7%	x		x								x		x		x	
10/23	194	0.6 g/1.7%	x		x								x		x		x	
10/23	195	0.6 g/1.7%	x		x								x		x		x	
10/23	196	0.6 g/1.7%	x		x								x		x		x	
10/23	198	0.6 g/1.7%	x		x								x		x		x	
10/23	199	0.6 g/1.7%	x		x								x		x		x	
10/23	200	0.6 g/1.7%	x		x										x		x	
10/23	201	0.6 g/1.7%	x		x										x		x	
10/23	202	0.6 g/1.7%	x		x										x		x	
10/23	203	0.6 g/1.7%	x		x										x		x	
10/23	C-5	9:05/9:35 Control	x		x								x		x		x	
10/23	188-B	0.4 g/1.7%	x												x		x	
10/23	190-B	0.4 g/1.7%	x			x									x		x	
10/23	197	0.4 g/1.7%	x		x										x		x	
10/23	204	0.4 g/1.7%	x		x										x		x	
10/23	205	0.4 g/1.7%	x												x		x	
10/23	206	0.4 g/1.7%	x												x		x	
10/23	C-1	9:05 Control	x												x		x	
10/23	207-A	0.4 g/1.7%	x												x		x	
10/23	208	0.4 g/1.7%	x												x		x	
10/23	209	0.4 g/1.7%	x												x		x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other			Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	Yes	No	(+)	(-)	(+)	(-)
10/23	210	0.4 g/1.7%		x		x						x			x	x	
10/23	211	0.4 g/1.7%	x		x			x-hash						x		x	
10/23	212	0.4 g/1.7%		x		x								x		x	
10/23	213	0.4 g/1.7%		x	x									x			
10/23	C-6	9:30/10:15 Control		x		x								x		x	
10/24	C-1	6:05 Control		x		x						x		x		x	
10/24	C-2	6:05 Control		x		x						x		x		x	
10/24	207-B	0.4 g/1.7%	x		x									x			
10/24	214	0.4 g/1.7%		x	x				Morax					x		x	
10/24	215	0.4 g/1.7%		x		x								x		x	
10/24	216	0.4 g/1.7%		x		x		x						x		x	
10/24	217	0.4 g/1.7%		x		x								x		x	
10/24	218	0.4 g/1.7%		x		x								x			
10/24	219	0.4 g/1.7%		x		x								x		x	
10/24	220	0.4 g/1.7%		x	x									x		x	
10/24	221	0.4 g/1.7%		x	x									x			
10/24	222	0.4 g/1.7%		x	x			x				x		x		x	
10/24	223	0.4 g/1.7%		x	x			x				x		x		x	
10/24	224	0.4 g/1.7%		x	x			x				x		x		x	
10/24	225	0.4 g/1.7%		x	x									x		x	
10/24	226	0.4 g/1.7%		x		x		x				x		x		x	
10/24	227	0.4 g/1.7%		x	x									x		x	
10/24	228	0.4 g/1.7%		x	x									x		x	
10/24	229	0.4 g/1.7%		x	x									x		x	
10/24	230	0.4 g/1.7%	x		x									x		x	
10/24	231	0.4 g/1.7%		x		x								x		x	
10/24	C-3	6:05/6:35 Control		x	x							x		x		x	
10/24	C-4	6:05/6:35 Control		x		x						x		x		x	
10/24	C-2	7:35 Control		x		x								x		x	
10/24	C-5	7:00/7:35 Control		x		x								x		x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other			Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	Yes	No	(+)	(-)	(+)	(-)
10/24	232	0.4 g/1.7%		x		x						x		x		x	
10/24	233	0.4 g/1.7%	x		x		x					x		x		x	
10/24	234	0.4 g/1.7%	x		x		x					x		x		x	
10/24	235	0.4 g/1.7%	x		x		x					x		x			
10/24	236	0.4 g/1.7%		x		x				x		x		x		x	
10/24	237	0.4 g/1.7%	x		x									x			
10/24	238	0.4 g/1.7%		x		x								x		x	
10/24	239	0.4 g/1.7%		x		x		x			Darvon	x		x		x	
10/24	240	0.4 g/1.7%		x								x		x		x	
10/24	241	0.4 g/1.7%		x		x					x			x		x	
10/24	242	0.4 g/1.7%	x											x		x	
10/24	243	0.4 g/1.7%		x		x								x		x	
10/24	244	0.4 g/1.7%		x		x		x						x		x	
10/24	245	0.4 g/1.7%		x		x		x						x		x	
10/24	246	0.4 g/1.7%		x							x			x		x	
10/24	247	0.4 g/1.7%		x		x					Chill			x			
10/24	248	0.4 g/1.7%	x		x			x						x		x	
10/24	249	0.4 g/1.7%	x		x			x						x		x	
10/24	250	0.4 g/1.7%	x		x									x		x	
10/24	C-6	8:20/8:40 Control		x		x								x			
10/24	251	0.25 g/1.7%		x		x								x		x	
10/24	252	0.25 g/1.7%	x		x							x		x		x	
10/24	253	0.25 g/1.7%	x		x									x		x	
10/24	254	0.25 g/1.7%	x		x									x		x	
10/24	255	0.25 g/1.7%	x		x									x		x	
10/24	256	0.25 g/1.7%		x		x					Quaalude			x		x	
10/24	257	0.25 g/1.7%		x		x					Quaalude PCP		x	x		x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other			Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	Yes	No	(+)	(-)	(+)	(-)
10/24	258	0.25 g/1.7%	x			x		x-THC						x		x	
10/24	259	0.25 g/1.7%	x		x									x		x	
10/24	260	0.25 g/1.7%	x			x						x		x		x	
10/24	261	0.25 g/1.7%	x			x						x		x		x	
10/24	262	0.25 g/1.7%	x		x							x		x		x	
10/24	263	0.25 g/1.7%	x			x								x		x	
10/24	C-7	8:20/8:40 Control												x		x	
10/24	264	0.25 g/1.7%	x			x								x		x	
10/24	265-A	0.25 g/1.7%			x									x		x	
10/24	265-B	0.25 g/1.7%	x			x			x			x		x		x	
10/24	266	0.25 g/1.7%	x		x									x		x	
10/24	267-A	0.25 g/1.7%	x		x		x							x		x	
10/24	267-B	0.25 g/1.7%	x		x		x		x					x		x	
10/24	268	0.25 g/1.7%	x		x		x							x		x	
10/24	269	0.25 g/1.7%	x			x								x		x	
10/24	270	0.25 g/1.7%	x		x		x		x N ₂ O					x		x	
10/24	271	0.25 g/1.7%	x			x		x						x		x	
10/24	272	0.25 g/1.7%	x			x								x		x	
10/24	273	0.25 g/1.7%	x			x		x				x		x		x	
10/24	274	0.25 g/1.7%	x			x			x					x		x	
10/24	275	0.25 g/1.7%	x		x							x		x		x	
10/24	276	0.25 g/1.7%	x		x							x		x		x	
10/24	C-8	9:00/9:15 Control	x			x								x		x	
10/24	C-9	9:00/9:15 Control	x			x						x		x		x	
10/24	277	0.25 g/1.7%	x		x									x		x	
10/24	278	0.25 g/1.7%	x			x								x		x	
10/24	279	0.25 g/1.7%	x			x		x						x		x	
10/24	280	0.25 g/1.7%	x		x									x		x	
10/24	281	0.25 g/1.7%	x			x								x		x	

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other				Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/24	282	0.25 g/1.7%		x		x			x						x		x	
10/24	283	0.25 g/1.7%	x		x											x	x	
10/24	C-10	9:15, 9:30		x		x										x	x	
10/24	C-11	Control																
10/24	284	9:15, Control		x		x								x		x	x	
10/24	285	0.25 g/1.7%		x		x			x				x			x	x	
10/24	286	0.25 g/1.7%		x		x										x	x	
10/24	287	0.25 g/1.7%	x			x												
10/24	288	0.25 g/1.7%	x			x							x			x	x	
10/24	C-1	9:45, Control		x		x							x			x	x	
10/25	C-1	6:15, Control		x		x							x			x	x	
10/25	289	0.25 g/1.7%		x		x												
10/25	290	0.25 g/1.7%		x		x							x			x	x	
10/25	291	0.25 g/1.7%		x		x					x		x			x	x	
10/25	292	0.25 g/1.7%		x		x										x	x	
10/25	293	0.25 g/1.7%	x			x										x	x	
10/25	294	0.25 g/1.7%		x		x										x	x	
10/25	295	0.25 g/1.7%		x		x										x	x	
10/25	297	0.25 g/1.7%		x		x										x	x	
10/25	298	0.25 g/1.7%	x			x										x	x	
10/25	299	0.25 g/1.7%	x			x										x	x	
10/25	300	0.25 g/1.7%		x		x												
10/25	295	0.25 g/1.7%		x		x												
10/25	301	0.25 g/1.7%		x		x												
10/25	302	0.25 g/1.7%	x			x												
10/25	303	0.25 g/1.7%	x			x												
10/25	304	0.25 g/1.7%		x		x												
10/25	305	0.25 g/1.7%		x		x												

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard		Moustache		Grass		Alcohol/ Soft Drink/ Other				Tobacco		Control		Smoking	
			Yes	No	Yes	No	Yes	No	Y	N	Y	N	Yes	No	(+)	(-)	(+)	(-)
10/25	C-2	6:15, 6:40 Control	x			x							x			x		x
10/25	C-3	6:15, 6:40 Control	x			x										x		x
10/25	306	0.25 g/1.7%	x			x										x		x
10/25	307	0.25 g/1.7%	x			x										x		x
10/25	308	0.25 g/1.7%	x			x										x		x
10/25	309	0.25 g/1.7%	x			x		x								x		x
10/25	310	0.25 g/1.7%	x		x											x		x
10/25	311-A	0.25 g/1.7%	x			x							x		x			x
10/25	312	0.25 g/1.7%	x			x							x			x		x
10/25	313	0.25 g/1.7%	x			x		x					x			x		x
10/25	314-A	0.25 g/1.7%	x			x										x		x
10/25	315	0.25 g/1.7%	x			x												x
10/25	316	0.25 g/1.7%	x			x							x					x
10/25	317	0.25 g/1.7%	x		x													x
10/25	318	0.25 g/1.7%	x															x
10/25	319	0.25 g/1.7%	x		x													x
10/25	320	0.25 g/1.7%	x		x													x
10/25	321	0.25 g/1.7%	x		x													x
10/25	322	0.25 g/1.7%	x		x													x
10/25	323	0.25 g/1.7%	x			x												x
10/25	C-324	6:30, 7:00 Control	x		x													x
10/25	325	0.25 g/1.7%	x		x													x
10/25	326	0.25 g/1.7%			x													x
10/25	349	0.25 g/1.7%																x
10/25	354	0.25 g/1.7%																x

TABLE VII (CONTINUED)

Date	Sample No.	Amt./Concentration	Beard Moustache NA	Grass		Alcohol/Soft Drink/Other			Tobacco		Control		Smoking
				Yes	No	Y	N	Y	Yes	No	(+)	(-)	
10/27	58	0.6 g/0.1% Hash	-						x		x		x
10/27	59	0.6 g/0.1% Hash	-						x		x		x
10/27	60	0.6 g/0.1% Hash	-								x		x
10/27	61	0.6 g/0.1% Hash	-					x			x		x
10/27	62	0.6 g/0.1% Hash	-								x		x
10/27	63	0.6 g/0.1% Hash	-								x		x
10/27	64	0.6 g/0.1% Hash	-								x		x
10/27	65	0.6 g/0.1% Hash	-						x		x		x
10/27	66	0.6 g/0.1% Hash	-					x	x	grass + hash	x		x
10/27	67	0.6 g/0.1% Hash	-								x		x
10/27	68	0.6 g/0.1% Hash	-						x		x		x
10/27	69	0.6 g/0.1% Hash	-								x		x
10/27	70	0.6 g/0.1% Hash	-								x		x
10/27	71	0.6 g/0.1% Hash	-						x		x		x
10/27	72	0.6 g/0.1% Hash	-						x		x		x
10/27	73	0.6 g/0.1% Hash	-						x		x		x
10/27	C-2	6:05, 6:40 Control	-								x		x
10/27	C-3	6:05, 6:40 Control	-								x		x
10/27	74	0.6 g/0.1% Hash	-						x		x		x
10/27	75	0.6 g/0.1% Hash	-					x			x		x
10/27	76	0.6 g/0.1% Hash	-					x			x		x
10/27	77	0.6 g/0.1% Hash	-								x		x
10/27	78	0.6 g/0.1% Hash	-								x		x
10/27	79	0.6 g/0.1% Hash	-					x			x		x
10/27	80	0.6 g/0.1% Hash	-								x		x
10/27	81	0.6 g/0.1% Hash	-								x		x
10/27	82	0.6 g/0.1% Hash	-								x		x
10/27	83	0.6 g/0.1% Hash	-							x			x
10/27	84	0.6 g/0.1% Hash	-										x

TABLE VII (CONCLUDED)

Date	Sample No.	Amt./Concentration	Beard Moustache NA	Grass		Alcohol/ Soft Drink/ Other			Tobacco		Control		Smoking	
				Yes	No	Y	N	Y	Yes	No	(+)	(-)	(+)	(-)
10/27	85	0.6 g/0.1% Hash	-						x		x		x	
10/27	86	0.6 g/0.1% Hash	-						x		x		x	
10/27	87	0.6 g/0.1% Hash	-						x		x		x	
10/27	88	0.6 g/0.1% Hash	-						x		x		x	
10/27	89	0.6 g/0.1% Hash	-		x						x		x	
10/27	90	0.6 g/0.1% Hash	-								x		x	
10/27	91	0.6 g/0.1% Hash	-								x		x	
10/27	92	0.6 g/0.1% Hash	-								x		x	
10/27	93	0.6 g/0.1% Hash	-								x		x	
10/27	94	0.6 g/0.1% Hash	-	x							x		x	
10/27	95	0.6 g/0.1% Hash	-	x							x		x	
10/27	102	0.6 g/0.1% Hash	-								x		x	
10/27	104	0.6 g/0.1% Hash	-								x		x	
10/27	105	0.6 g/0.1% Hash	-								x		x	
10/27	107	0.6 g/0.1% Hash	-								x		x	
10/27	110	0.6 g/0.1% Hash	-								x		x	
10/27	111	0.6 g/0.1% Hash	-								x		x	
10/27	112	0.6 g/0.1% Hash	-	x				x	x		x		x	
10/27	113	0.6 g/0.1% Hash	-	x				x	x	speed	x		x	
10/27	114	0.6 g/0.1% Hash	-								x		x	
10/27	115	0.6 g/0.1% Hash	-	x							x		x	
10/27	126	0.6 g/0.1% Hash	-								x		x	
10/27	127	0.6 g/0.1% Hash	-								x		x	
10/27	C-3	9:30, Control	-								x		x	
10/27	C-4	9:30, Control	-											
10/27	128	0.6 g/0.1% Hash	-								x		x	

(Found smoking during session - invalid)

TABLE VIII

SUMMARY OF RESULTS ON FINAL SMOKING TESTS

	BEFORE		AFTER		<u>% (+)</u>
	<u>Controls</u> <u>(-)</u> <u>(+)</u>	<u>Smokers</u> <u>(-)</u> <u>(+)</u>	<u>Controls</u> <u>(-)</u> <u>(+)</u>	<u>Smokers</u> <u>(-)</u> <u>(+)</u>	
0.6 g/1.7% mj	9 0	50 0	9 0	13 37	74 (37/50)
0.4 g/1.7% mj	5 0	50 1	5 0	15 35	70 (35/50)
0.25 g/1.7% mj	7 0	50 4	7 0	19 31	62 (31/50)
0.6 g/1.7% mj	5 0	50 2	5 0	9 41	82 (41/50)
0.4 g/1.7% mj	8 0	50 1	8 0	13 37	74 (37/50)
0.25 g/1.7% mj	7 0	50 2	7 0	20 30	60 (30/50)
0.6 g/0.1% hash	3 0	50 1	3 0	9 41	82 (41/50)

TABLE IX

EVALUATION OF POSSIBLE INTERFERENCES IN THE
LIP SWAB TEST FOR HASHISH SMOKERS

<u>Material</u> <u>Tested</u>	<u>Color</u> <u>Observed</u>	<u>Material</u> <u>Tested</u>	<u>Color</u> <u>Observed</u>
THC (Active Cannabis Ingredient)	Bright Red	Mescaline	Pale Brown/Orange
Phenobartital	Pale Brown/Orange	Lobeline	Pale Brown/Orange
Pentobarbital	Pale Brown/Orange	Nalorphine	Pale Brown/Orange
Amobarbital	Pale Brown/Orange	Preludin	Pale Brown/Orange
Secobarbital	Pale Brown/Orange	Tripeleennamine	Pale Brown/Orange
Butabarbital	Pale Brown/Orange	Methapyrilene	Pale Brown/Orange
Butobarbital	Pale Brown/Orange	Phenylpropanolamine	Pale Brown/Orange
Dilantin	Pale Brown/Orange	Doriden	Pale Brown/Orange
Demerol	Pale Brown/Orange	Numorphan	Pale Brown/Orange
Aspirin	Pale Brown/Orange	Areca	Dark Brown/Pink
Salicylic Acid	Pale Brown/Orange	Catechu	Dark Brown/Pink
Chlorpheniramine	Pale Brown/Orange	Chamomile	Pale Pink/Orange
Diphenhydramine	Pale Brown/Orange	Damiana	Brown
Elavil	Pale Brown/Orange	Hops	Brown
Mellaril	Pale Brown/Orange	Horsetail	Brown/Green
Darvon	Pale Brown/Orange	Kava Kava	Brown
Quinine	Pale Brown/Orange	Kola	Brown
Ritalin	Pale Brown/Orange	Lobelia	Brown
Serax	Pale Brown/Orange	Mistletoe	Brown
Sparine	Pale Brown/Orange	Mormon Tea	Orange/Pink
Stelazine	Pale Brown/Orange	Tobacco	Brown
Thorazine	Pale Brown/Orange	Mustard	Brown
Tofranil	Dark Brown/Pink	Onion	Brown
Valium	Pale Brown/Pink	Paprika	Brown
Morphine	Pale Brown/Pink	Passion Flower	Brown
Codeine	Pale Brown/Pink	Scull Cap	Brown
Glutethimide	Pale Brown/Pink	Valerian	Brown
Cocaine	Pale Brown/Pink	Wormwood	Brown
Methadone	Pale Brown/Pink	Yohimbe	Orange/Pink
Dilaudid	Dark Brown/Pink	Nutmeg	Brown/Pink
Quinine Extract	Dark Brown/Pink	Cinnamon	Brown
Nicotine	Dark Orange/Yellow	Cloves	Brown/Pink
MDA	Pale Brown/Pink	Ginger	Brown/Pink
STP	Pale Brown/Orange	Mace	Pink/Orange
Amphetamine	Pale Brown/Orange	Pepper	Brown
Methamphetamine	Pale Brown/Orange	Rosemary	Brown
DMT	Pale Brown/Orange	Sage	Brown
DET	Pale Brown/Orange	Thyme	Brown

TABLE X

EVALUATION OF POSSIBLE INTERFERENCES IN THE
PAPER TEST FOR HASHISH (AND MARIHUANA) PLANT MATERIAL

<u>Material Tested</u>	<u>Color Observed</u>	<u>Material Tested</u>	<u>Color Observed</u>
Hashish	Red	Passion Flower	-
Marihuana	Red	Scull Cap	-
Areca	Pink/Orange/Red	Valerian	-
Catechu	Pink/Orange/Red	Wormwood	-
Chamomile	-	Yohimbe	Pink/Red
Damiana	-	Nutmeg	Pink/Orange
Hops	-	Cinnamon	Pink/Orange
Horsetail	-	Cloves	Pink/Orange
Kava Kava	-	Ginger	Pink/Orange
Kola	-	Mace	Red/Orange
Lobelia	-	Pepper	-
Mistletoe	-	Rosemary	-
Mormon Tea	Pink/Red	Sage	-
Mustard	-	Thyme	-
Onion	-	Tobacco	-
Paprika	-		

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